

REMARKS

Claims 1-31 are pending in the case, 20-31 having been withdrawn. The Office Action rejected each of claims 1-19 as follows:

- claims 1-5 and 7-17 as anticipated under 35 U.S.C. §102(e) over U.S. Patent Publication 2003/0223822 (“Oldervoll”);
- claim 6 as obvious under 35 U.S.C. §103(a) over Oldervoll and U.S. Letters Patent 6,519,395 (“Bevan”) in combination; and
- claims 18-19 as obvious under 35 U.S.C. §103(a) over Oldervoll and U.S. Letters Patent 4,491,939 (“Carpenter”) in combination.

Applicants traverse each of the rejections.

I. RESPONSE TO SUBSTANTIVE MATTERS

A. CLAIMS 1-5 AND 7-17 ARE NOVEL OVER OLDERVOLL

The Office rejected claims 1-5 and 7-17 as anticipated under 35 U.S.C. §102(e) over U.S. Patent Publication 2003/0223822 (“Oldervoll”). An anticipating reference, by definition, must disclose every limitation of the rejected claim in the same relationship to one another as set forth in the claim. M.P.E.P. §2131; *In re Bond*, 15 U.S.P.Q.2d (BNA) 1566, 1567 (Fed. Cir. 1990).

As Applicants’ previously argued, both of independent claims 1 and 18 recite “a stress member extending continuously through the sensor module”. Dependent claims 2-17 and 19 incorporate this limitation as a matter of law by virtue of their dependence. 35 U.S.C. §112, ¶4. Oldervoll fails to disclose this limitation.

The Office maintains the rejection, and posits that the cable does, indeed, extend “continuously” through the housing:

Applicant argues that Oldervoll does not show a stress member extending continuously through the sensor housing as recited in the claims. Applicant argues that Oldervoll's stress member is external to the housing. This argument is not persuasive as the claims recite that the stress member has to extend continuously through a sensor module. Oldervoll discloses that the strength member extends continuously through the sensor module that is attached to the seismic cable. Oldervoll shows the stress member extending continuously through the sensor module 102 by

entering a first end 208 and exiting a second end 208. Oldervoll discloses that the stress member is continuous, and discloses the stress member coupling to and passing through the sensor modules attached to the cable (Figs. 1-3). Applicant's argument that Oldervoll at best shows the stress member passing through only that part of the sensor module that attaches the module to the cable are not persuasive. ***Applicant's claims do not recite which parts of the sensor module the stress member must specifically pass through, or how the stress member passes through the sensor module. Therefore the disclosure of Oldervoll showing the stress member passing continuously through both ends of the sensor module meets applicant's claim limitation.***

(Office Action dated June 1, 2009, pp. 8-9, emphasis added)

Applicant has amended the independent claims 1 and 18 to recite that the stress member extends “continuously through that portion of the sensor module housing the geophone”. Dependent claims 2-17 and 19 incorporate this limitation as a matter of law by virtue of their dependence. 35 U.S.C. §112, ¶4. The independent claims therefore now “recite which parts of the sensor module the stress member must specifically pass through”, thereby fully addressing the Office’s concerns regarding the claim language. Furthermore, it can be seen from Fig. 1 – Fig. 3 of Oldervoll, reproduced below, that the support member therein does not extend “continuously through that portion of the sensor module housing the geophone”. Accordingly, 1-5 and 7-17 are be novel over Oldervoll.

It is also apparent from the passage quoted above that the Office believes that the cable extends continuously through the housing of Oldervoll because it enters one end and exits the other. The Office is wrong because this is not the whole of the concept described by the term “continuously”, or its root “continuous”. For example, *Webster’s New Collegiate Dictionary* defines “continuous” as meaning “marked by uninterrupted extension in space, time, or sequence”. A true and correct copy of this definition is attached hereto.

As Applicant’s previously noted:

Oldervoll does not show a stress member extending continuously through the sensor housing as is recited in the claims—Oldervoll’s stress member is external to the housing. The strength member 202, first shown in Figure 2, is a part of the cable 104, best shown in Figure 1C. As is apparent in Figure 1C and best shown in Figure 3, the stress member 104 passes through only that part of the sensor module 102 that attaches the module 102 to the cable 104. This is not “continuously through the sensor housing”. In addition to these clear depictions, Oldervoll also

expressly states in ¶[0024] that the “stress member 202” is mechanically coupled to the “sensor housing 210” rather than “extending continuously through the sensor module”. Accordingly, Oldervoll fails to anticipate any of claims 1-5 and 7-17.

(“Amendment” filed March 3, 2009, p. 8) The reference drawings from Oldervoll are once again reproduced below.

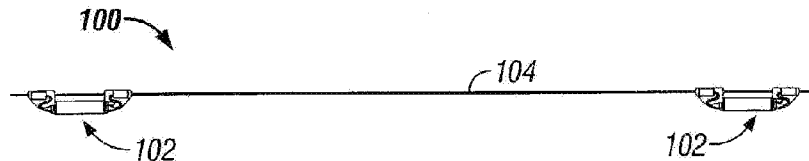


FIG. 1C

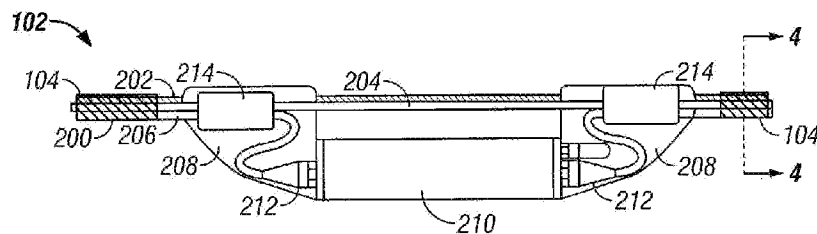


FIG. 2

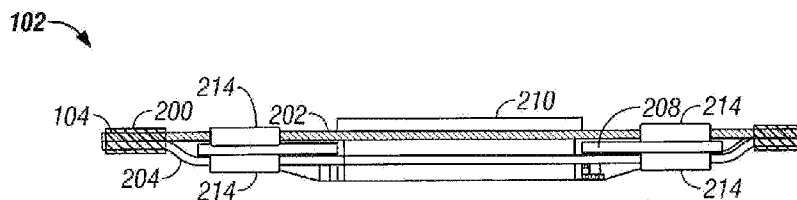


FIG. 3

The drawings quite clearly show that not only does the cable 104 enter one end of the housing and exit the other, it also exits and re-enters the housing in between. The consequence is that the cable 104 bypasses a substantial portion of the housing in which the sensor 210 resides. Thus, the cable’s passage through the housing is *not* “marked by uninterrupted extension in space, time, or sequence”—*i.e.*, it is not “continuous”—from the perspective of either the cable or the housing. Accordingly, under a correct construction of the word “continuously”, Oldervoll does not anticipate any of claims 1-5 and 7-17. M.P.E.P. §2131; *In re Bond*, 15 U.S.P.Q.2d (BNA) 1566, 1567 (Fed. Cir. 1990).

**B. CLAIMS 6 & 18-19 ARE UNOBVIOUS OVER
OLDERVOLL & EITHER BEVAN OR CARPENTER**

There are two obviousness rejections predicated on combinations of art including Oldervoll:

- claim 6 as obvious under 35 U.S.C. §103(a) over Oldervoll and Bevan in combination; and
- claims 18-19 as obvious under 35 U.S.C. §103(a) over Oldervoll and Carpenter in combination.

These rejections suffer from at least two errors.

**1. Oldervoll Teaches Away from Bevan & Carpenter
Such That They Cannot Properly Be Combined**

Both Bevan and Carpenter teach the incorporation of strengthening structures into the cable itself, which Oldervoll teaches away from. Thus, Oldervoll cannot properly be combined with either Bevan or Carpenter. More particularly, both Bevan and Carpenter incorporate the strengthening structures into the seismic cable itself. Oldervoll teaches directly away from these types of approaches because the high mechanical rigidity transmits noise degrading the cable's performance. ¶[0005], ¶[0007]

The Office takes exception to this analysis because it relies on what Bevan and Carpenter teach other than the proposition for which the Office cited them:

Applicant's arguments that Oldervoll cannot be combined with Bevan or Carpenter because Oldervoll teaches away from the approach of using an approach including incorporating the strengthening structures into the seismic cable itself are not persuasive. *Carpenter and Bevan were not used to teach changing the structure of the strength member of Oldervoll to make it an incorporated part of the cable. Instead, Bevan was cited to teach using a sheath surrounding the strength member and cable lead elements in order to protect the leads and strength member from the environment.* Incorporating such a sheath surrounding the strength member and leads in Oldervoll does not change the function of the stress member as an external stress member in Oldervoll [sic]. *Carpenter was cited as teaching a particular type of winding for the leads in the cable, and not for any modification to the stress member or arrangement of the stress member in Oldervoll.* The modification to include S-Z windings as taught by Carpenter modifies only the cable leads in

Oldervoll and provides the advantage of taking away possible strain on the conductors. Therefore, applicant's arguments that Oldervoll is not combinable with Bevan or Carpenter are not persuasive.

(Office Action dated June 1, 2009, pp. 4-5, emphasis added)

The proposition for which the references are cited is not material to this analysis. The teachings of a prior art reference must be taken as a whole when evaluating obviousness rather than considered in bits and pieces. *Panduit Corp. v. Dennison Mfg. Co.*, 1 U.S.P.Q.2d (BNA) 1593, 1597 (Fed. Cir.), *cert. denied*, — U.S. —, 107 S. Ct. 2187 (1987). "It is well settled that a prior art reference is relevant for *all* that it teaches one of ordinary skill in the art." *In re Fritch*, 23 U.S.P.Q.2d (BNA) 1780, 1782 (Fed. Cir. 1992). The Office does not contest Applicants' construction of Bevan and Carpenter, only the application of those teachings. However, the subject teachings cannot be ignored or suppressed as the Office is attempting to do.

As a consequence, the evidence of record—*i.e.*, the disclosures of the three references—establishes that Oldervoll is not combinable with either Bevan or Carpenter. *In re Fine*, 5 U.S.P.Q.2d (BNA) 1596, 1599 (Fed. Cir. 1988); *In re Gordon*, 221 U.S.P.Q. (BNA) 1125, 1127 (Fed. Cir. 1984); M.P.E.P. §2145 X D 2. Motivation to combine the teachings of two or more references cannot be supplied through abstraction but must be grounded in practical considerations flowing from "positive, concrete evidence of record which justifies a combination of primary and secondary references." *In re Regal*, 188 U.S.P.Q. (BNA) 136, 139 (C.C.P.A. 1975) (n. 6). The Office's argument justifying the combination cannot overcome this evidence. The rejections are therefore improvident and Applicants request they be withdrawn.

2. Oldervoll Teaches Away from the Claimed Subject Matter, and Therefore Establishes Its Unobviousness Over the Art of Record

Each of the independent claims recites "a stress member extending continuously through the sensor module"—*i.e.*, an internal stress member. As noted above, Oldervoll teaches that internal stress members are undesirable for a variety of reasons in at least ¶[0005], ¶[0007]-¶[0008], and ¶[0022]. It is by now well established that teaching away by the prior art constitutes *prima facie* evidence that the claimed subject matter is not obvious. *See, inter alia, In re Fine*, 5 U.S.P.Q.2d (BNA) 1596, 1599 (Fed. Cir. 1988); *In re Nielson*, 2 U.S.P.Q.2d (BNA) 1525, 1528 (Fed. Cir. 1987); *In re Hedges*, 228 U.S.P.Q. (BNA) 685, 687 (Fed. Cir. 1986).

Accordingly, the evidence of record establishes that the claims are not obvious. Applicants therefore request that all obviousness rejections be withdrawn.

The Office rejects this reasoning, arguing:

...Even though Oldervoll teaches that traditional internal stress members are not desirable, Oldervoll is discussing stress members that are an internal part of the seismic cable including the conductors and other elements of the cable. Oldervoll is not discussing stress members that are internal to any part of a sensor module in these references to internal stress members being undesirable. The claims do not contain limitations as to whether the stress member is an internal or external part of the cable itself. The claims only require that the stress member extend continuously through the sensor module independently of any lead. Oldervoll teaches this limitation as shown in Figs. 1-3 by teaching a stress member external to the seismic cable containing the leads (therefore independent of the leads) that extends continuously through a sensor module 102.

(Office Action dated June 1, 2009, pp. 8-9, emphasis added)

As a preliminary matter, the last sentence is incorrect as Applicants established above. If the term “continuously” is properly defined, and if that definition is properly applied, the cable 104 of Oldervoll does *not* extend “continuously” through the housing 102.

The rest of the statement is correct, but is immaterial. Oldervoll clearly establishes that the prior art he discusses encases the receivers within the cable along with stress members to create a “high mechanical rigidity”. ¶[0004]- ¶[0005], ¶[0007]. It also indicates that this is problematic in that it permits propagation of noise that degrades the cable’s performance. ¶[0007] So, what Oldervoll teaches away from is encasing the receivers with the stress members within the cable.

As noted, the claims herein recite a cable having “a stress member extending continuously through the sensor module”. This necessarily implies to one in the art that the sensor module housing the sensor is encased within the cable along with the stress member—the very thing that Oldervoll teaches is undesirable. Thus, despite the Office’s protestations to the contrary, Oldervoll does in fact teach away from the present invention.

III. CONCLUDING REMARKS

Applicants therefore respectfully submit that the claims are in condition for allowance, and requests that they be allowed to issue. The Examiner is invited to contact the undersigned attorney at (713) 934-4053 with any questions, comments or suggestions relating to the referenced patent application.

Respectfully submitted,

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WILLIAMS, MORGAN & AMERSON
10333 Richmond Dr., Suite 1100
Houston, Texas 77042
(713) 934-7000

/Jeffrey A. Pyle/

Jeffrey A. Pyle
Reg. No. 34,904
Attorney for Applicants